

KUZ'MINA, N.N.; SONGINA, O.A.

Oxidation of sulfite, sulfide, and thiosulfate on a rotating platinum anode. Izv.vys.ucheb.zav.;khim. i khim.tekh. 6 no.2:201-208 '63. (MIRA 16:9)

1. Kuybyshevskiy industrial'nyy institut imeni V.V.Kuybysheva i Kazakhskiy gosudarstvennyy universitet imeni S.M.Kirova, kafedra analiticheskoy i fizicheskoy khimii.

(Sulfur compounds) (Oxidation, Electrolytic)

KUZ'MINA, N.N.; SONGINA, O.A.

Composition of thiourea complexes of silver formed during  
amperometric titration. Zhur. anal. khim. 18 no.3:323-  
328 Mr'63, (MIRA 17:5)

1. Kuybyshevskiy industrial'nyy institut i Kazakhskiy  
gosudarestvennyy universitet.

MAGNITSKIY, Vladimir Aleksandrovich; KUZ'MINA, N.N., ved. red.

[Internal structure and physics of the earth] Vnutrennee  
stroenie i fizika Zemli. Moskva, Nedra, 1965. 378 p.  
(MIRA 18:7)

PALKIN, V.A.; KUZ'MINA, N.N.; CHERNYAYEV, I.I.

Heat capacities of nitrochloride compounds of bivalent platinum.  
Zhur. neorg. khim. 10 no.1:49-52 Ja '65. (MIRA 18:11)

1. Submitted May 28, 1964.

USSR/Chemistry - Spectral analysis

Card 1/1      Pub. 43 - 68/97

Authors : Granovskiy, I. V., and Kuz'mina, N. P.

Title : Spectral analysis of open-hearth and blast-furnace slag from solutions

Periodical : Izv. AN SSSR. Ser. fiz. 18/2, page 285, Mar-Apr 1954

Abstract : A method was developed for spectral analysis of open-hearth and blast-furnace slag by converting the latter into a solution. Results obtained by this spectral analysis method are briefly described. One USSR reference (1950).

Institution : The I. V. Stalin Metallurgical Plant, Stalinsk

Submitted : .....

L 38:21-66 EWT(1)

ACC NR: AP6024868

SOURCE CODE: UR/0056/66/051/001/0101/0107

AUTHOR: Zubova, N. V.; Kuz'mina, N. P.; Zubov, V. A.; Sushchinskiy, M. M.;  
Shuvalov, I. K.

55  
B

ORG: Physics Institute im. P. N. Lebedev, Academy of Sciences SSSR (Fizicheskiy institut Akademii nauk SSSR)

TITLE: Intensity distribution in stimulated Raman scattering spectra

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 51, no. 1, 1966, 101-107

TOPIC TAGS: raman scattering, ~~acoustic~~ <sup>laser</sup> optics, laser, light

ABSTRACT: The line intensity of stimulated Raman scattering spectra (SRS) was experimentally investigated as a function of the exciting light intensity. The measurements were conducted in a region of intensities above and below the experimental threshold for a single flash. The intensity distribution in SRS spectra was investigated for several Stokes and anti-Stokes components. The existence of a considerable wing accompanying each component was detected. A structure of the first Stokes component of SRS was found and was investigated in the threshold region and below the threshold. Orig. art. has: 7 formulas and 4 figures. [CS]

SUB CODE: 20/ SUBM DATE: 21Feb66/ ORIG REF: 008/ OTH REF: 002/ LTD PRESS:

Card 1/1 *AB*

5043

*KUZMINA N.P.*

Category : USSR/Optics - Optical Methods of Analysis. Instruments

K-7

Abs Jour : Ref Zhur - Fizika, No 2, 1957, No 5166

Author : Granovskiy, I.V., Kuz-mina, N.P.

Title : Spectral Analysis of Blast-Furnace and Open-Hearth Slags in Solutions

Orig Pub : Zavod. laboratoriya, 1954, 20, No 4, 436-440

Abstract : No abstract

Card : 1/1

KUZ'MINA, N.P.

SOV/81-59-16-57620

Translation from: Referativnyy zhurnal.. Khimiya, 1959, Nr 16, p 281 (USSR)

AUTHORS: Il'inskiy, V.P., Boytsova, V.F., Drozdova, Ye.G., Kuz'mina, N.P., Rusinova, K.D.

TITLE: The Preparation of Dry Hydrogen Bromide

PERIODICAL: Sb. tr. Gos. in-ta prikl. khimii, 1958, Nr 41, pp 161-170

ABSTRACT: Dry HBr is synthesized from bromine and  $H_2$  in the presence of the "BAU" coal at  $600^{\circ}C$ ; the yield is 91 - 96%. A technological method of purifying and drying HBr has been developed ensuring the preparation of a product containing  $\sim 0.04\%$  moisture and  $H_2S$  traces.

N. Shirayeva.

Card 1/1



SOV/137-58-8-16897

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 8, p 97 (USSR)

AUTHORS: Kuz'mina, N.S., Perlin, I.L.

TITLE: Strength Characteristics of MN5 Alloy Under Conditions of Cold and Hot Pressworking (Prochnostnyye kharakteristiki splava MN5 v usloviyakh kholodnoy i goryachey obrabotki davleniyem)

PERIODICAL: Sb. nauchn. tr. Mosk. in-t tsvetn. met. i zolota, 1957, Nr 27, pp 282-299

ABSTRACT: An examination is made of the mechanical and production characteristics of MN5 alloy in the light of methods of pressworking. Investigations of the properties of MN5 alloy show: 1. Maximum and minimum Ni and Fe contents in MN5 alloy (the limits being those of the Technical Specifications) show a difference of 6-7 kg/mm<sup>2</sup> in  $\sigma_b$ . Approximately the same change in  $\sigma_b$  is induced by the change in the dimensions of the initial billet for drawing. 2. The temperature interval for maximum plasticity (P) of MN5 alloy is 800-1000°C, the minimum P being 550-700°. If Ni and Fe contents are at the maximum provided by the Technical Specifications, the zone of maximum P is shifted approximately 100° upward in temperature. An

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SOV/137-58-8-16897

Strength Characteristics of MN5 Alloy (cont.)

increase in strain (S) rate from 0.305 to 2.56%/sec increases  $\sigma_b$  up to 500<sup>0</sup> this increase is insignificant, whereas in the high temperature region it attains 8 kg/mm<sup>2</sup>. 3. The results obtained for the ratio of true  $\sigma_s$  to duration of S (S rate) further confirm the absolute necessity of considering degree of S. 4. Time of S (rate) exercises its major effect at the higher temperatures. The rate coefficient of MN5 alloy in the S-rate interval of 0.305-2.5%/sec attains 4.26 when the degree of S is up to 60% and the temperature is 1000<sup>0</sup>.  
Ye.L.

1. Alloys--Processing
2. Alloys--Mechanical properties
3. Alloys--Temperature factors

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SOV/137-58-9-20112 D

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 9, p 285 (USSR)

AUTHOR: Kuz'mina, N.S.

TITLE: Determining the Plastic Properties of MN5 Alloy and a Flow Sheet for the Manufacture of Tubes From This Alloy (Oprede-  
leniye plasticheskikh svoystv splava MN5 i ustanovleniye tekhnologicheskogo protsessa proizvodstva trub iz etogo splava)

ABSTRACT: Bibliographic entry on the author's dissertation for the degree of Candidate of Technical Sciences, presented to the Mosk. in-t tsvetn. met. i zolota (Moscow Institute for Nonferrous Metals and Gold), Moscow, 1958

ASSOCIATION: Mosk. in-t tsvetn. met. i zolota (Moscow Institute for Nonferrous Metals and Gold), Moscow

1. Manganese alloys--Plasticity 2. Manganese alloy tubing--Production

Card 1/1

KUZ'MINA, N.S.

Making copper-nickel alloy pipes with iron and manganese; alloy  
MN5. Izv. vys. ucheb. zav.; tsvet. met. no.1:153-163 '58.  
(MIRA 11:6)

1. Moskovskiy institut tsvetnykh metallov i zolota. Kafedra  
obrabotki metallov davleniyem.

(Copper-nickel alloys)  
(Pipe, Copper)

BAGDASAROVA, A.M.; ISLAMOV, K.Sh.; KORIDALIN, Ye.A.; KUZNETSOV, V.P.;  
KUZ'MINA, N.V.; NENILINA, V.S.; NERSESOV, I.L.; SULTANOVA, Z.Z.;  
KHARIN, D.A.

Seismicity of the eastern part of the southern spurs of the  
Greater Caucasus and some problems of methodology in studying  
the seismicity of individual regions. Report No.1. Izv.AN Azerb.SSR.  
Ser.geol.-geog.nauk no.6:121-131 '59. (MIRA 15:4)  
(Caucasus--Seismology)

SOV/49-59-7-12/22

AUTHOR: Kuz'mina, N. V.

TITLE: On Utilizing Refracted Waves in Determination of the Earth's Crust of the South East Part of the Main Caucasian Range

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya geofizicheskaya, 1959, Nr 7, pp 1036-1045 and 2 plates (USSR)

ABSTRACT: The experimental determination of the earth's crust from the refracted waves was carried out in 1953 by the Caucasian expedition of the Institute of Geophysics, Academy of Sciences USSR, in conjunction with the Institute of Physics and Mathematics, Azerbaydzhan SSR. The data employed was collected by the Caucasian seismic stations shown as triangles on the map, Fig 1, which also gives the various types of epicentres (1-3 and 4-6) and their number (7). All the stations were supplied with the same type of seismographs except Konakhkend and Aga-Beyli, the frequency characteristics of which are illustrated in Fig 2. It was assumed that the geological characteristics of the area are those described by various investigators (Table 1) (Refs 9 and 10). The wave velocities used in calculations were obtained from 4 strong earthquakes as follows:

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On Utilizing Refracted Waves in Determination of the Earth's Crust of the South East Part of the Main Caucasian Range

$$\begin{aligned} V_{\bar{P}} &= 5.6 \text{ km/sec} , & V_{\bar{S}} &= 3.3 \text{ km/sec} , \\ V_{P*} &= 6.4 \text{ km/sec} , & V_{S*} &= 3.8 \text{ km/sec} \\ V_P &= 7.8 \text{ km/sec} , & V_S &= 4.6 \text{ km/sec} . \end{aligned}$$

As an example, Fig 3 illustrates a hodograph of one of the earthquakes for which velocities of the waves P and S were determined as  $V_{\bar{P}} = 5.6 \text{ km/sec}$  and  $V_{\bar{S}} = 3.1 \text{ km/sec}$ .

Four discontinuities were considered as those diffracting the waves: 1) the boundary of the sedimentary layer, 2) the surface of the crystalline base, 3) the bottom of the crystalline base and 4) the bottom of the basalt layer (i.e., Mohorovicic discontinuity). Fig 7 shows the type of wave propagation ( $\bar{P}$  and  $\bar{PS}$ ) used for calculations. It illustrates a case of an actual earthquake (24.9.53) at

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On Utilizing the Refracted Waves in Determination of the Earth's Crust of the South East Part of the Main Caucasian Range

Shemaha, the seismograms of which are shown in Figs 4 and 5. The experimental and theoretical hodographs of the refracted waves  $\bar{P}$ ,  $\bar{S}$ ,  $\bar{PS}_1$  and  $\bar{PS}_2$  of this earthquake are

given in Fig 6. The analysis of these hodographs shows that an increase of the apparent velocity of the waves  $\bar{P}$  and  $\bar{S}$  for small epicentric distances indicates a great depth of focus, also the ratio  $V_{\bar{P}}/V_{\bar{S}} \approx 1.9$  indicates that for a

large part of their path the waves propagate in the sedimentary layer. This is shown in Fig 8, where the seismograms of another earthquake (8.9.1954 in Beklya) are illustrated. Here, a  $\bar{PS}_2$  wave and two waves in the sedimentary

layer are clearly visible. The travel time of wave propagation  $t_{\bar{P}}$  at different stations was calculated from the

known hypocentral distances and from the velocity  $V_{\bar{P}}$

(Table 2). The entering waves recorded by seismograms (Figs 9, 10 and 11) show the reflected waves of  $\bar{P}_R\bar{S}$  type

or  $sP^*$  type reflected as the  $S$  waves near the epicentre

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and then propagated as  $P^*$  and finally becoming  $PS$ ,  $PPS$  and  $PPPS$ . The velocity of  $P$  waves was found to be 6.5 km/sec while a second entering wave was of  $P^*S_3$  type.

Thus, from the time difference between the two,

$\Delta t = \Delta t_{PS} - t_{P^*}$  (foot of p 1042), a thickness of the basalt layer was obtained. The results of all calculations are illustrated in Fig 12, where the thicknesses of the layers are given along the line Vartashen-Shemaha-Beklya. The comparison between the experimental data (group of curves 1) and the theoretical calculations (curve 2) is illustrated in

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On Utilizing the Refracted Waves in Determination of the Earth's  
Crust of the South East Part of the Main Caucasian Range

Fig 13. There are 14 figures, 2 tables and 14 references, all  
of which are Soviet.

ASSOCIATION: Akademiya nauk SSSR, Institut fiziki Zemli (Academy  
of Sciences USSR, Institute of Physics of the Earth)

SUBMITTED: March 3, 1958.

Card 5/5

S/169/61/000/011/013/065  
D228/D304

AUTHORS: Kuznetsov, V.P., Kuz'mina, N.V., Nenelina, V.S.  
Nersesov, I.L., Sultanova, Z.Z., and Kharin, D.A.

TITLE: Seismicity of the eastern part of the southern spurs  
of the Central Caucasus Range and some methodical  
questions of the study of seismicity of separate areas

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 11, 1961, 18,  
abstract 11A162 (Izv. AN AzerbSSR, Ser. geol.-geogr.  
n., no. 5, 1960, 21 - 33)

TEXT: Determination of the degree of seismic activity on the sou-  
thern spurs of the Central Caucasus Range was continued from the ex-  
peditional data of 1953 (for the first part see RZhGeofiz., no. 10, ✓  
1960, 11944) with a description of the strongest earthquakes: The  
Aksu-Kyurdamir earthquake of October 8, 1953, and the Avakhil earth-  
quake of October 4, 1953 (the strongest ones); and the Caspian re-  
gion earthquakes of August 8, September 14 and 19, and October 13.  
Epicentral zones - situated in a comparatively narrow strip along  
the Central Caucasus Range's southern slopes which follows the main  
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Seismicity of the eastern part ...

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D228/D304


structural directions - were considered. With the exception of some deviations, the seismically-active sections correspond to the transitional belt from the depressions to the mountain regions, i.e. the zone of contemporary contrasting movements. In the vicinity of Kutkashen a group of epicenters in a small area is situated transverse-ly to the strike of the structures. Within the seismically-active belt the areas of epicenter concentration are separated by sections of complete quiescence. When comparing the expeditional data of 1953 and 1951 - 1952 with those of the network of permanent stations for the period from 1913, it is established that a certain redistribution of seismic activity has taken place, although the locations of strong earthquakes coincide with areas which are distinguished by their activity according to the observations of seasonal expeditions. The expeditional investigations enable observational data to be processed more accurately and a better basis to be constructed for the relations of seismic and tectonic phenomena. The complexity of the geologic structure of the study area hampered the obtaining of the coordinates of earthquake foci with the required precision. The use of different methods permitted determination of the epicenter positions with an accuracy of up to  $\pm 5$  km, and also

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the propagational velocities of seismic waves and their ratios. The ratio of the velocities for different foci varied from west to east from 1.8 (the Vartashen district) to 2.2 (the Avakhl district), evidently because of the presence of a thick series of sedimentary rocks in the eastern areas. The low value of the fictitious velocity, which varies from 4.1 (Astrakhanovka) to 6.1 km/sec. (Durukhsha) is a consequence of the low value of the velocity ratio. [Abstractor's note: Complete translation].



Card 3/3

BAGDASAROVA, A.M.; ISLAMOV, K.Sh.; KORIDALIN, Ye.A.; KUZNETSOV, V.P.;  
KUZ'MINA, N.V.; NENILINA, V.S.; NERSESOV, I.L.; SULTANOVA, Z.Z.;  
KHARIN, D.A.

Seismicity of the eastern part of the southern spurs of the Greater  
Caucasus and some problems of methodology in studying the seismicity  
of individual regions. Report No.3. Izv.AN Azerb.SSR. Ser.geol.-  
geog.nauk i nefti. no.4:13-24 '61. (MIRA 15:1)  
(Caucasus--Seismology)

KUZ'MINA, N.V.; ROMASHEV, A.N.; RULEV, B.G.; KHARIN, D.A.; SHEMYAKIN, Ye.I.

Seismic effect of draw blasting in nonrocky cohesive soils.

Trudy Inst. fiz. Zem. no.21. Vop. inzh. seism. no.6:3-72  
'62. (MIRA 15:9)

(Blasting)

KUZ'MINA, N.V.

Elimination of interfering surface waves in weak underground draw  
blasting. Izv. AN SSSR. Ser. geofiz. no.6:876-888 Je '63.  
(MIRA 16:7)

1. Institut fiziki Zemli AN SSSR.  
(Blasting) (Seismometry)



KUZ'MINA, N.V.

Formation of spontaneous intergeneric hybrids in the Pamirs.  
Trudy Pam. biol. sta. 1983-1984 '83. (MIRA 17:80)

L 24774-66 EWT(1)/EWA(h) GW  
ACC NR: AT6007205

SOURCE CODE: UR/2619/65/000/036/0137/0153

AUTHOR: Kharin, D. A.; Kuz'mina, N. V.; Danilova, T. I.

ORG: Institute of Physics of the Earth, Academy of Sciences, SSSR (Institut fiziki Zemli Akademii nauk SSSR)

TITLE: Vibrations of the soil during underground explosions

SOURCE: AN SSSR. Institut fiziki Zemli. Trudy, no. 36 (203), 1965. Seysmicheskoye mikrorayonirovaniye; voprosy inzhenernoy seysmologii (Seismic microdistricting; problems of engineering seismology), no. 10, 137-153

TOPIC TAGS: underground explosion, soil mechanics, seismology, ground shock

ABSTRACT: Soil vibrations are measured in a series of underground explosions with various charges at reduced depths  $h/\sqrt{C} \approx 2,65 \mu/\kappa^{1/2}$ . The structural strength of the soil above the charge remained constant during these explosions. Several additional series of explosions were made at various reduced depths. The experiments were done on an elevated watershed in slightly broken terrain. The land had a grade of 10-12 m/km. Wells were sunk to a depth of 30 meters through Quaternary morainic loam

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ACC NR: AT6007205

deposits. The soil oscillations were measured by seismic detectors and oscillographs developed at the Institute of Physics of the Earth. The instruments were sensitive to displacements ranging from 0.001 to 200 mm. A series of concentrated charges were set off to determine the wave pattern and the basic parameters of soil oscillations as functions of the weight of the charge and distance. The parameters of these explosions are tabulated. A map is given showing placement of the charges and instruments and the entire experimental procedure is described. The wave pattern near the epicenter of the underground explosion is simple in form. The seismogram of this wave pattern consists of two oscillations (upper and lower) with a period of 0.5-0.6 sec. The pattern becomes more complicated with distance. At 20-40 m from the epicenter, distinct  $R_1$  and  $R_2$  phases detach themselves from the body wave (P phase). The distance between the P and  $R_1$  phases increases with epicentral distance, while the distance between the  $R_1$  and  $R_2$  phases remains constant. The amplitude of the body wave decreases with distance much more rapidly than in the  $R_1$  and  $R_2$  phases. Thus, R-vibrations become dominant at greater distances from the epicenter. The same groups of waves appear on all recordings regardless of the weight and depth of the charge. This fact was used for plotting a composite travel-time curve for the first arrivals and characteristic phases. It was found that the compression wave for an explosion at a depth of about 12 meters travels from the

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focus of the explosion to the surface at a rate of  $\sim 450$  m/sec, while the corresponding velocity for a charge placed at a depth of 28 m is 700-800 m/sec. The apparent velocity for propagation of the longitudinal body wave is approximately 1000 m/sec at distances of up to 100 m from the epicenter. There is an inflection in the travel-time curve at this point and the head wave goes out to the first arrivals at a velocity of 1700-1800 m/sec. The point at which the branches of the curve intersect indicates that the depth of this transition point is 25 m. The interface may be either the base of the loam deposit or a water-bearing layer. The curves show a second interface at a depth of about 200-220 m which is probably a limestone roof. Empirical formulas are given for velocities in body and surface waves in terms of the weight of the charge and the distance. These formulas may be used for calculating seismically safe distances. Orig. art. has: 13 figures, 2 tables, 3 formulas.

SUB CODE: 08/ SUBM DATE: 00/ ORIG REF: 011/ OTH REF: 000

Card 3/3

7/18/5

BORZUNOV, N.A.; KUZ'MINA, N.Ya.; NEVYAZHSKIY, I.Kh.; OSOVETS, S.M.;  
PETROV, Yu.F.; POLYAKOV, B.I.; POPOV, I.A.; KHODATAYEV, K.V.;  
SHIMCHUK, V.P.

Studying a plasma on a traveling wave setup. Dokl. AN SSSR 152  
no.3:581-584 S '63. (MIRA 16:12)

1. Predstavleno akademikom A.L.Mintsem.

KUZ'MINA, N.Ye., red.; STRIGIN, V.M., red.; GLEYKH, D.A., tekhn.red.

[Naturalist's and regional study student's pocket book]  
Kormannaia kniga naturalista i kraeved. Moskva, Gos.izd-vo  
geogr.lit-ry, 1961. 258 p. (MIRA 14:3)  
(Nature study) (Physical geography)

KUZ'MINA, O.A.

GARETSKIY, R.G.; KUZ'MINA, O.A.

New outcrop of continental Cretaceous deposits in the northern  
Aral Sea region. *Byul. MOIP Otd.geol.* 31 no.15:63-73 S-O '56.

(MIRA 10:3)

(Aral Sea region--Geology, Stratigraphic)

KUZ'MINA, O.A.

Geology of the left bank of the Amu Darya in the Kungrad-Tashauz sector. Trudy SGPK no.1:41-53 '60. (MIRA 13:10)

(Amu Darya Valley--Petroleum geology)  
(Amu Darya Valley--Gas, Natural--Geology)



YEROFEYEV, N.S.; LODZHEVSKIY, I.G.; KUZ'MINA, O.A.; POPOV, N.G.

Basic results of geological prospecting operations conducted by the  
Union Geological Prospecting Bureau of the Main Administration of  
Urban Gas Supply of the U.S.S.R. in the western part of Central  
Asia. Trudy SGPK no.2:3-11 '61. (MIRA 14:11)  
(Soviet Central Asia--Petroleum geology)  
(Soviet Central Asia--Gas, Natural--Geology)

KUZMINA, O.O.

ca

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Changes in quenched carbon-chromium steel during tempering. N. T. Gudizov and O. O. Kuzmina. *Repts. Inst. Metals* (Leningrad) No. 14, 37-50 (in English 00 1) (1963). The material studied consisted of 2 grades of ball-bearing steel analyzing (1) C 1.17, Cr 1.47, Si 0.30, Mn 0.34, P 0.017%, and S trace; (2) C 1.06, Cr 0.90, Si 0.30, Mn 0.35 and S 0.0027%. The samples were first heated to 800°, quenched in oil and then tempered. In order to follow the changes taking place in the steel during the tempering process, the samples were examined during various stages of tempering for hardness, impact, expansion and temp. coeff. of expansion, temp. coeff. of elec. resist., and micrographically. The disappearance of distorted tetragonal lattices of  $\alpha$ -Fe + C in solid solns. takes place at 125°, as indicated by shrinkage of samples on prolonged heating and by x-ray analysis. At 150-175° the amt. of  $\gamma$ -Fe + C solid soln. grows at the expense of  $\alpha$ -Fe + C solid soln. This is indicated by a decrease in hardness, increase in impact value, shrinkage, lower elec. resistance and a higher temp. coeff. of elec. resistance. At 190-225° there is a fall in the impact value. This is the result of

preceding phenomena, as the formation of  $\gamma$ -Fe causes latent stresses which retard transition processes. At 225-300° a transition process takes place  $\gamma$ -Fe + C solid soln.  $\rightarrow$   $\alpha$ -Fe + C solid soln., as evidenced by a higher impact value, up to the normal, retardation in the decrease of hardness, expansion on prolonged heating, rapid increase of coeff. of expansion and normal appearance of temp. coeff. of elec. resistance. At 275-300°, the process  $\alpha$ -Fe + C solid soln.  $\rightarrow$   $\alpha$ -Fe + Fe carbide begins, as evidenced by retardation of thermal expansion, shrinkage in the course of prolonged heating, lower elec. resistance, and by x-ray analysis. S. L. Madorsky

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

KUZ'MINA, O. O.

C. A. Vol. 31, 8476-1

GUIDISOV, N. T., BARANOV, F. D., and KUZ'MINA, O. O.

"Phenomena Occurring During Drawing of Quenched Carbon Steel." Metallurg 12, No. 1, 9-20(1937).—Quenched C tool steel was subjected to dilatometric, magnetic and x-ray exam. during drawing at 100-650°. The following changes took place: transformation of tetragonal martensite into cubical at 125-200°, transformation of austenite into cubical martensite at 200-300°, disintegration of cubical martensite with the formation of mol. carbide which has no definite cryst. orientation at 300-350°, orientation of mol. carbide into dispersed crys carbide at 350-450° and coagulation of the dispersed carbide into larger crystals above 450°.

KUZ'MINA, O.O.; MINAYEV, N.G.; PSHENICHNIKOV, A.P.

Method for determining subsurface defects in metals by means  
of transverse ultrasonic waves. Zav.lab. 22 no.8:943-949 Ag  
'56. (MLRA 9:11)

(Metals-Testing) (Ultrasonic testing)

BORISOVA, V.N.; GIRSHFEL'D, R.V.; ZAKIN, M.M.; KUZ'MINA, P.A.; MAKAREVICH,  
M.S.

Use under dispensary conditions of seeding of sputum and tracheal  
washings for the detection of Mycobacteria tuberculosis. Probl.  
tub. 38 no.2:66-67 '60. (MIRA 13:11)

1. Iz II-go protivotuberkuleznogo dispansera Moskvyy (glavnyy  
vrach G.V. Kotsubey).  
(MYCOBACTERIUM TUBERCULOSIS)

KUZNETSOVA, V.I., kand. tekhn. nauk, red.; KUZ'MINA, P.P., kand. geogr. nauk, red.; PUSHKAREVA, V.F., kand. fiz.-mat. nauk, red.

[Materials of the Interdepartmental Conference on the Problem of Studying Evaporation from the Land Surface, August 1-5, 1961] Materialy Mezhdudomstvennogo soveshchaniia po probleme izucheniia ispareniia s poverkhnosti sushi, 1-5 avgusta 1961 g. Valdai, Gos.gidrologicheskii in-t, 1961. 263 p. (MIRA 17:2)

1. Mezhdudomstvennoye soveshchaniye po probleme izucheniya ispareniya, 1961. 2. Gosudarstvennyy gidrologicheskii institut, Leningrad (for Kuz'mina, Pushkareva).

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1. Iz Leningradskogo instituta imeni Pastera.

(MUMPS, immunology,

vaccine, infect., reactogenic & immunogenic properties of dry prep. of living attenuated vaccine (Rus))

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AUTHOR: Rerberg, M. S.; Vorob'yeva, T. I.; Kuz'mina, R. I.; Barkhatova, I. M. 46

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TITLE: Processing human excrement by means of naturally occurring algal and bacterial populations

SOURCE: AN SSSR. Otdeleniye biologicheskikh nauk. Problemy kosmicheskoy biologii, v. 4, 1965, 598-604

TOPIC TAGS: Chlorella, bacteria, algae, life support system, chemical precipitation, excretion, vacuum distillation, closed ecology system, centrifugation, water, processed animal product, chemical purity, water purification

ABSTRACT: Small, closed, life-support systems based on recirculation of biosubstances consist of three phases: 1) synthesis, 2) consumption, and 3) reutilization (i.e., recirculation into the system of the products of human vital activity). An attempt was made to reclaim water. Naturally occurring populations of Chlorella vulgaris and bacteria were chosen as agents by which it was hoped to achieve a higher degree of efficiency than is usual with phytoplankton and bacterial flora in sewage basins. A three-step culture process, affording sufficient mineralization of excreted organic matter, the creation of an algae biomass, and production of secondary, humus-type organic matter, was used.

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illumination in 24) cut this time to 72 hours. The water obtained (after precipitation of secondary organic matter) conformed to the GOST standard 2761 (1957) for water supply sources. Results of chemical analysis are given in Table 2.

Table 2. Medium from human wastes (dilution 1 : 40) processed by stepwise laboratory cultivation

Medium from human excreta	NH <sub>4</sub>	NO <sub>2</sub>	NO <sub>3</sub>	Albumi- noid N	Alka- linity mg/eq	Hard- ness, mg/eq	Cl <sup>-</sup>	SO <sub>4</sub> <sup>2-</sup>	Mg	Ca	P	Fe <sub>2</sub> O <sub>3</sub>	Perman- ganate number
	mg/liter						mg/liter						
Before	8.5	4.5	0.04	15.2	2.6	2.5	180.00	137.7	11.2	25.90	23.5	0.1	100.8
After	0.34	1.07	0.001	—	2.5	1.1	178.40	97.5	8.16	9.5	0.00	0.05	35.6

Intensive algae culture on a potassium-urine substrate in a water-closed system for 5 months showed: 1) Due to the presence in human wastes of substantial amounts of minerals not required by the organisms

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Table 3. Utilization of elements by Chlorella  
in human waste culture (in mg)

Element	Medium at outset (1:40)	Amount of ele- ment used by algae	Medium at end	Remainder
Carbon	118,3	1640	36,9	13.6-fold deficit
Nitrogen	82,19	67,75	14,47	82,23
Phosphorus	23,5	22,76	0,0	22,76
Sulfur	18,88	5,86	13,0	18,88
Magnesium	11,2	3,04	8,16	11,2
Calcium	25,9	15,84	9,5	25,34

used (Chlorella and bacterial flora), mineral salts were not assimilated but accumulated to saturation and then began to precipitate out of solution. This led to pH fluctuations in the medium. 2) Prolonged (5 months) culture caused saturation of the medium with soluble and nonsoluble humus-type organic matter. Nonsoluble matter can be removed by precipitation, but the soluble matter accumulates and suppresses the vital activity of the Chlorella and bacteria. Physical and chemical purification to remove soluble organics is required from time to time to prevent deterioration of the system. Centrifugation followed by vacuum distillation proved highly

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effective for removing sodium and sulfur. NaCl (up to 2 g/liter stimulated the algae, and larger amounts (up to 4 or 5 g/liter) did no harm. Table 3 shows the amounts of various elements present in the medium at the beginning, used by the Chlorella, and present in the medium at the end of the process.

One approach to these problems may be the alteration of human diet to bring the composition of excreta more closely in line with the requirements of the algal-bacterial link. For instance, human diet might be enriched with nitrogen, phosphorus, and magnesium to combine with excess sulfur and potassium to form compounds more easily assimilable by the algae-bacteria population.

Biological recirculation of substances advantageously combines four functions in a single process: 1) primary biomass synthesis, 2) reutilization of raw waste, 3) primary purification of water, and 4) regeneration of oxygen. Orig. art. has: 2 figures and 3 tables. [ATD PRESS: 4091-F]

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KUZENKOV, V.

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